AN ACCOUNT OF REARING THE SMALL DOTTED FOOTMAN MOTH, *PELOSIA OBTUSA* (HERRICH-SCHÄFFER) LEP.: ARCTIIDAE

By COLIN HART*

I have been trying to locate this elusive moth for some years in its only known habitat in Great Britain of the Norfolk Broads. The search had been unsuccessful despite my idea of using a hired holiday cruiser to reach otherwise inaccessible localities. Finally, at a site suggested by Bernard Skinner, I caught a male *obtusa* at light on the night of 25th July 1983 and a female three nights later. It would appear that the males are attracted to light from about 11pm onwards, but the female was not at light, she was found crawling up my jeans at 10.30pm, and I assume she had been disturbed from amongst the reeds.

The moth was retained in a plastic box which was kept damp so as to keep the humidity high in an attempt to mimic the environment at the base of the reeds. A total of forty ova were laid during the following two nights. A few eggs were scattered individually round the box but the majority were laid in two small batches of thirteen and nineteen eggs, laid neatly in interlocking rows. The ovum is pale pinkish-buff in colour and the shape of a slightly flattened hemisphere of diameter 0.3mm. The surface is shiny with a reticulated pattern of depressions. The eggshell is translucent and any colour that the egg has comes from the contents within. The ova were kept at room temperature (about 22°C in a period of hot weather) and hatched in eleven days. The curled up larvae were clearly visible with the aid of a lens on the day prior to eclosion.

The newly hatched larva is about 2 mm long, light brownish grey and moderately hairy. They were given a choice of foodplants including reed, cocksfoot grass, sallow, dandelion, lettuce and convolvulus (a species of convolvulus occurs in the habitat). The larvae wandered around a great deal and nibbled the lettuce in a desultory manner producing a little frass. After three days and growing slightly frantic I introduced a small piece of dead wood which had a growth of the green alga *Desmococcus* (=*Pleurococcus*) on the surface. This was a popular move as within a few hours all the larvae had congregated on the wood surface and were feeding on the alga. They continued to eat the *Desmococcus* and I experienced no further problems with feeding. The larvae grew slowly through the autumn and moulted several times, towards the end of October they went into hibernation. Each larva settled upside-down on the underside of a piece of bark or other object, and most had spun extensive silk pads to settle on. At this stage the larvae were about 7mm long (Figure 2) and if disturbed would

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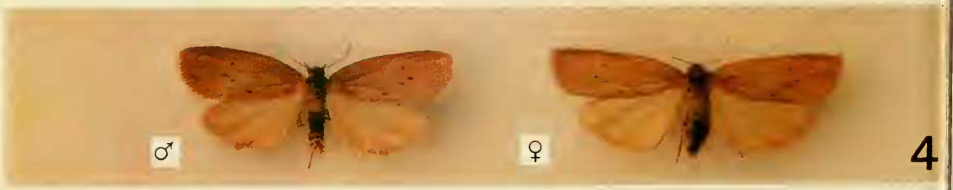

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drop off and curl up in a manner typical of many arctiid larvae. As might be expected I experienced the greatest mortality during the winter with seven deaths occuring during March. As far as I could judge about half the larvae died of fungal infection and the remainder 'dried up' with no trace of fungus, only three larvae survived to the spring.

The larvae did not become active again until late April when they resumed feeding on the alga, little progress was made however until the begining of June when they started feeding in earnest and a rapid increase in size resulted. (Figure 1) The larvae were observed to feed only at night but not at all in a regular manner. When examined at all hours of darkness usually only one larva was feeding and the other two would be at rest.

In the final moult the larvae change colour quite dramatically from a mid brownish grey to nearly black. The pattern and ornamentation of all larvae are similar, only the colour changes. When fully grown the larva is 20 mm long and narrow with a slight anterior taper (Figure 3). The ground colour is now dark velvety grey, almost black. On the dorsal third of each segment is an irregular grey patch picked out with a lighter grey perimeter and there is also a round lateral spot of the same colour. The eight verrucae occur on these patches (six dorso-laterally and one on each lateral spot) and give rise to star-shaped clusters of shortish black hairs. These hairs are fairly sparse and vary in length up to about half the width of the body. There is a clear dorsal line which is thin and black, it is usually entire and bulges out to form a distinct patch on segments two and three. The underside is pale with no markings. The head is dark brown and glossy, there is one black verruca bearing short hairs low down on the side of each eye bulge. The head is larger than the first segment and the larva often sits in a characteristic attitude flattened onto the substrate with the top of the head tilted back so that the mandibles are thrust forward and easily visible. All the legs are a mid grey colour.

The pupa is enclosed in a thin greyish cocoon with a distinct inner lining. The larval skin remains attached to the pupa which is light chestnut brown, distinctly darker on the thorax and between the abdominal segments. The pupa is shiny and 13 mm long. This stage lasted for sixteen days and the first moth, a female, emerged

LEGEND TO FIGURES (OPPOSITE)

Pelosia obtusa (Herrich-Schäffer). Fig. 1 larva about $\frac{2}{3}$ grown and shed skin. Fig. 2 larva $\frac{1}{3}$ grown just before hibernation. Fig. 3 larva final instar and pabulum growing on dead bark. Fig. 4 imagines, male on the left. All specimens bred ex imago, Norfolk Broads. Photographs C. Hart. Scale (approx.) Fig. 1, x 6; Fig. 2, x 7.5; Fig. 3, x 3.5; Fig. 4, x 1.5.

on the 10th July 1984, a very early date which was probably due to the early stages being kept indoors for the previous two months. In an attempt to obtain a pairing the moth was kept cool but it died afted ten days when the second surviving pupa produced a perfect male.

When these two bred specimens were set and compared it was noticed that there was a distinct difference in wing shape between the sexes. The male has a rather broad wing, both the costa and termen are strongly curved, and this gives the apex a blunt, rounded appearance. By contrast the female wing is much narrower, the costa is straighter and the apex has a distinctly square look. The exact shape of male moths is variable but all give the impression of a broad, stubby wing with a blunt apex. By comparison the wing colour is remarkably constant in each sex. The female specimens I have are slightly paler than the males and the spots are less distinct but it is difficult to be certain with only two female specimens to hand (Figure 4). Looking at specimens illustrated in the past it would appear that Fletcher, (1963) illustrates a male and so also does Skinner, (1984). Heath and Emmet, (1979) show a male, and although the abdomen is clearly correct the narrow wings and angled apex are much more like that of a female than the photographs referred to in the first two books.

Acknowledgements

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